

CLAIMS

1. A network relay apparatus comprising:
  - a routing information gathering unit for determining the maximum transmission unit of a transmission path along a route over which packets are to be transmitted; and
  - a combining unit for assembling a combined packet by combining packets up to a length that does not exceed the maximum transmission unit of said transmission path.
2. An apparatus according to claim 1, wherein said combined packet carries as a destination address the address of an endpoint of the route over which said packets are transmitted in combined form, said apparatus further comprising:
  - a disassembling unit for disassembling a received combined packet into individual packets if the destination address of said received combined packet matches the address of said apparatus.
3. An apparatus according to claim 1, further comprising a routing processing unit for selecting a path having the largest maximum transmission unit as a path for said combined packet from among a plurality of transmission paths to the same destination.
4. An apparatus according to claim 3, wherein said routing processing unit selects a path having the largest maximum transmission unit as a path for said combined packet from among a plurality of transmission paths to the same destination by excluding the path along the shortest route.
5. An apparatus according to claim 1, further comprising a combine allow/disallow determining unit for determining, based on a packet attribute, whether or not said combining unit should be made to combine packets.
6. An apparatus according to claim 1, further comprising a reassembling unit for disassembling a received combined packet into individual packets and

reassembling the same into a combined packet of a length not exceeding the maximum transmission unit of the currently selected path if the length of said received combined packet exceeds said maximum transmission unit.

5         7. A method of combining packets, comprising the steps of:

              determining the maximum transmission unit of a transmission path along a route over which packets are to be transmitted; and

10            assembling a combined packet by combining packets up to a length that does not exceed the maximum transmission unit of said transmission path.

15         8. A method according to claim 7, wherein said combined packet carries as a destination address the address of an endpoint of the route over which said packets are transmitted in combined form, said method further comprising the step of:

20            disassembling a received combined packet into individual packets if the destination address of said received combined packet matches the address of an apparatus that received said combined packet.

25         9. A method according to claim 7, further comprising the step of selecting a path having the largest maximum transmission unit as a path for said combined packet from among a plurality of transmission paths to the same destination.

30         10. A method according to claim 9, wherein in said selecting step, a path having the largest maximum transmission unit is selected as a path for said combined packet from among a plurality of transmission paths to the same destination by excluding the path along the shortest route.

35         11. A method according to claim 7, further comprising the step of determining, based on a packet attribute, whether to combine or not combine packets.

              12. A method according to claim 7, further comprising the step of disassembling a received combined

packet into individual packets and reassembling the same into a combined packet of a length not exceeding the maximum transmission unit of the currently selected path if the length of said received combined packet exceeds said maximum transmission unit.

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